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ABSTRACT

Human development from about ages 2 to 5 is presented in terms of the history of a child conceptualized in terms of stimulus and response functions and his interactions in current situations which consist of organismic, physical, and social conditions. The concepts describing the changes that occur during this developmental period, such as exploratory behavior, cognitive behavior, and moral behavior are invariably cast in nonobservable terms indigenous to the psychoanalytic, social learning, and cognitive approaches. To make them consistent with the objectives, assumptions, and principles of a functional analysis of behavior, these concepts must be reanalyzed and redefined. The resulting reformulations would have extensive implications for research and for practical applications. (Author/CS)

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Development in the Preschool Years:

A Functional Analysis

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Many child psychologists have said that the preschool years, from about ages 2 to 5, are among the most important, if not the most important of all the stages of development, and a functional analysis of that stage strongly points to the same conclusion. It is unquestionably the period during which the foundation is laid for the complex behavioral structures that will be built in a child's life time.

To single out a particular stage as being important does not mean that that stage is necessarily the most appropriate one for predicting the future behavior of a child. Any theory of development worth "its salt" must analyze behavior in step fashion, not only through successive stages, but eventually through successive substages. What it does mean is that that stage deserves a great deal more systematic attention than it has been accorded so far. It is true that a large number of studies have been conducted on preschool children, but as we all know, the frequent use of preschool children as research subjects hardly indicates that the researchers are oriented toward formulating a systematic account of this stage of development. Most often preschool children are used as a population of subjects to establish norms, or to test hypotheses about internal constructs.

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We are all familiar with the way the preschool period is characterized by psychoanalytic theory, emphasizing as it does, the emergence of independence and the resolution of the oedipus complex. We also know how this period

is described by the social learning theory, with its emphasis on the weaning of dependency, the beginnings of socialization (social habits and social drives), and the development of conscience and self-control, and we know, too, how it is characterized by the cognitive theory, with the focus on the emergence of the conceptual-symbolic mode. The view is that a child becomes increasingly able to represent events internally - that is, he becomes able to think, and thereby he becomes less dependent on his sensorimotor actions for the direction of his behavior. In other words, the cognitive theorist believes that in this period the child is transformed from someone with action structures to someone with thought structures (Piaget & Inhelder, 1969).

The psychoanalytic, the social learning, and the cognitive-developmental theories point up some of the most important behavioral characteristics of the period, but I find them wanting in their attempted explanations because each includes "created", internal, causal structures and processes. There is room, it seems to me, for another model, based on behavior analysis. The meaning of behavior analysis, as I use the term, is spelled out in a little volume by Don Baer and me, published in 1961. The essential point, and the one that distinguishes it from other behavioral and learning approaches, is that this approach is concerned exclusively with observable accounts of the interactions between stimulus and response functions.

I believe that there has been sufficient progress in general behavior analysis to permit one to make a systematic analysis of the complex behaviors observed during the preschool period. This advancement has come about, in large measure, through the efforts of a whole host of people, most of them members of Division 25 (Experimental Analysis of Behavior), and many of Division 7 (Developmental Psychology). I also believe that there are at

least three reasons why such a systematic analysis is urgently needed: first, such an analysis would accelerate the explication of a set of principles that would interrelate with principles of infrahuman behavior, on one hand, and our knowledge of practical applications in the child areas, on the other; second, it would bring current practices in child therapy, early childhood education, and child-rearing practices closer to what we now know about behavior; and third, it would help counteract the recent unfavorable and damaging press given behavior modification or applied behavior analysis. Unfortunately, little public attention has been given to the considerable work of behavior modification which has been concerned with enhancing the development and happiness of children. I suppose that sort of positive material does not make good copy. But now and then we do see some recognition of such work, so I suppose we should be thankful for that.

My presentation of a functional analysis of the preschool years, what we call the basic stage, is in three parts. The first deals with a functional analytical sketch of this period; the second touches lightly on some of the problems encountered in trying to tie this analysis to findings in the child development literature; and the third points out some of the implications of such an analysis.

I. Sketch of the Basic Stage

I shall sketch the basic stage, emphasizing the functional characteristics of the changing child, the changing environment, and the interactions between the two. While doing so, I shall take the liberty of explaining some of the whys and wherefores. Being the academic type, I would hardly be expected to do otherwise.

The Child in the Basic Stage

The child in the basic stage is a function of his history during his first 18 months - what we refer to as the universal stage - and the stimulating situations that constitute the environment of the basic stage. Over the course of the universal stage, his responses are coordinated with environmental events in ways that produce organized responses, notably, body management, locomotor and prehensive skills. Toward the end of the universal stage, he acquired verbal, or linguistic, behavior. The progress he makes and the forms of the responses he has acquired are a function of his anatomy and physiology, his rate of biological maturation, and stimulation from physical and social sources (conceptualized as stimuli and as setting factors). All sets of conditions are important, but those from biological sources assume the dominant role. Hereditary factors come into play as powerful participating determiners of a child's biological structure, functioning, and growth rate which in turn are sources of some of the causes of behavior.

Equipped with foundational responses, both non-verbal and verbal, the child, interacting with his mother and other members of his family during the basic stage, develops a set of highly complex behaviors. Some of these behaviors, in refined and extended forms, will be maintained throughout his life (especially those that are private and intimate); others will serve as prerequisites for subsequent more complex behavior. How they change and the rapidity of the changes are a function of the particular circumstances the child encounters. The organization of responses acquired in the basic stage characterizes a child as a unique social person, as a "personality."

The importance of the verbal behavior a child acquires cannot be overestimated considering that it extends his sensory and motor capacities and

facilitates development of some of the most intricate forms of behavior, including fantasizing, problem solving, reasoning, and thinking. Practically all of the interactions in the basic stage involve large segments of verbal behavior.

To complete this functional analysis of the child we need to emphasize that the child himself is also a source of stimulation, some arising from his internal biological interactions (interoceptors) and some from his responses to the external environment (proprioceptors). Some are conceptualized as stimuli; others as setting factors.

The Environment of the Basic Stage

The behavior of a child in the basic stage cannot be analyzed functionally without continual reference to the specific events in his environment and to the ways he interacts with them. So in discussing the environment, I shall first make a few remarks about a functional analysis of the environment in general, and then present briefly a functional analysis of the environment in the basic stage.

In psychology, sometimes the environment refers to a person's perceptions, the way he sees things; sometimes it refers to the physical or social dimensions of objects and people, as a physicist or a sociologist might treat them; and sometimes it refers to specific physical and social events in contact with a particular person. In behavior analysis, the environment is treated in accordance with the third view, i.e., it refers to the specific events in contact with a particular person. Furthermore, specific environmental events are measured in terms of their physical dimensions, both static and dynamic, and in terms of their functional properties, i.e., their influence on behavior grossly categorized as discriminating, reinforcing, eliciting, and setting. The physical dimensions

of environmental events are, of course, shared by all children. On the other hand, the functional properties of environmental events are unique to each individual child because they have evolved from his own reinforcement history. To be sure, many environmental events, measured in physical terms, have similar functional properties for many children because, as members of a given society, they have been exposed to them under similar sets of circumstances. This consideration suggests that the only reliable way of determining the functional properties of an environmental event for a particular child is by means of an empirical test. From this point of view, the environment of development is unique for each child since no two children have the same combination of hereditary history and personal history when conceptualized in functional terms.

What I have said about the functional concept of the environment adds up to this: (1) The environment consists of specific events in actual contact with a particular individual; and (2) The functional properties of environmental events are of primary concern in a functional analysis of behavior. When we talk about stimuli, we are referring to functional properties, for they alone indicate the "meaning" of an environment as determined by the child's behavior in relation to it. It should be noted in passing that the concept of stimulus function in behavior analysis bears much of the load assigned to hypothetical variables in other theories.

A functional analysis of the environment of the basic stage. Given this conceptualization of the general environment, what, specifically, might be said about the environment in the basic stage? We would say:

First, the interactions between a child and environmental events are generally social, consisting mostly of relationships between the chil and his mother and other members of his family. Although these interactions

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are not as stable and constant as those during the universal stage, in which child-rearing practices are rather "tight," they are far more so than the interactions during the succeeding societal stages, which involve individuals and groups outside the family.

Second, social behavior is mainly related to external discriminative stimuli; internal stimuli are just beginning to acquire verbal labels. Typically, the mother and other family members are beginning to ask: How do you feel? Are you happy? Are you ashamed? Are you tired? And so on.

Third, social reinforcers are typically strong because of their frequent and close pairing with homeostatic reinforcers and because socially mediated aversive contingencies have been sparsely used.

Fourth, reinforcing contingencies are usually given to the child for progress in becoming more independent, for demonstrating new skills and knowledge, for social responsiveness, and for compliance with the early dictates of the family's moral code.

Fifth, setting factors from organismic sources, such as abundance of energy and freedom from restrictions imposed by biological immaturity, increase the probability of high activity levels and behavior associated with positive emotional predispositions. Setting factors from social sources, for example, the emotional "tone" of family, sometimes characterized along such dimensions as happy vs. sad, and out-going vs. isolate increase the probabilities of some of a child's social behaviors and decrease the probabilities of others. The behavior patterns that emerge go a long way toward typifying his social behavior.

The Interaction Between the Child and the Environment

Let us now consider further the interactions between the child and the environment. We have emphasized that in a functional analysis we cannot

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analyze a child without reference to his environment, nor is it possible to analyze an environment without reference to a child. The two are absolutely inseparable. The unit formed by this combination constitutes a constellation of interdependent variables, or a field, which is the subject-matter of the analysis of behavior, developmental or otherwise. The variables in such a field interact mutually: stimuli influence responses, and responses influence stimuli. We are comfortable with the first relationship - stimuli influence responses - because we are accustomed to thinking of responses as dependent variables. On the other hand, the second relationship - responses influence stimuli - tends to make us uneasy. The problem is mainly linguistic, for we all know that as a consequence of responses, old stimulus functions are strengthened, weakened, or remain unchanged, and new stimulus functions are created. This concept of multi-way interaction is not unlike Lewin's field forces (1954), Tolman and Brunswik's "causal texture" (1935), Kantor's "interbehavioral field" (1959), and Skinner's "contingencies of reinforcement" as presented in his book with the same title (1969).

You will notice that in this formulation the child is not considered as passive, as one waiting to be stimulated by the environment; nor is he looked upon as a seeker of stimulation. Conceptualizing a child in either of these ways assumes a completely physicalistic view of the environment, a notion that there is something "out there" which one can enter or leave at will. We look at a child as a unique, verbally capable, biological individual who evolves from hereditary and environmental interactions, and who is in continuous interaction with the environment, resulting in changes in both the child and the environment. Sometimes the changes are subtle; sometimes they are dramatic. Sometimes they are erratic; sometimes they are progressive.

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The interactions of the basic stage have been described in a number of ways but perhaps the term "casual" is most often used (Kantor, 1959). Typically, a mother rears her preschool child as just one of her numerous responsibilities in the home, caring for him as she does for other members of her family. Analytically, this description can be translated to mean that: (1) The contacts between mother and child are less frequent and less intense than they were during the universal stage. Most of the child's learning now takes place under "natural" conditions, for the reason that the discriminative and reinforcing contingencies are, in general, loosely structured. (2) The child spends more of his time interacting with objects and other children and adults, especially if he attends a preschool. And (3) some of these behaviors acquired remain as relatively permanent parts of the child's behavior structure, while others become integrated with subsequent behaviors.

II. Some Formulations, Problems, and Reformulations

An understanding of how a particular child develops during the basic stage requires an analysis of the major classes of interactions. I have selected for discussion three of those considered most cogent. They are: (1) exploratory behavior, (2) cognitive behavior, and (3) moral behavior.

I shall mention some of the typical treatments accorded these concepts, point out some of their shortcomings when viewed in the light of behavior analysis, and shall suggest some alternate formulations.

Exploratory Behavior

Much of the literature on exploratory behavior focuses on Berlyne's theory, which differentiates between specific and diversive exploratory behavior. According to Berlyne, specific exploratory behavior involves the "collative" properties of stimuli, such as novelty, complexity, and stimulus change, which instigate, first, arousal and then, exploratory

behavior, which in turn reduces the arousal. Diversive exploratory behavior, on the other hand, pertains to behavior in relation to boredom: a boring situation creates a Hullian-type drive which instigates behavior producing stimulus change.

Those who have reviewed the field of exploratory behavior, such as Cantor (1963), and Nunnally and Lemond (1974), have repeatedly pointed out that Berlyne's formulations of novelty, complexity, stimulus change and boredom pose serious definitional problems. And many, including Cofer and Appley (1964), have questioned the usefulness of the drive states which Berlyne has introduced.

An alternate formulation, described by Don Baer and me in Vol. 2 of Child Development (1965, Pp. 5-7), treats exploratory behavior as a sequence of operant interactions which is strengthened and maintained by contingent ecological stimuli under specifiable setting factors. Ecological stimuli originate both in physical objects and in the physical dimensions of social and biological stimuli. The specifiable setting factors include the absence of setting factors which increase the probability of behaviors more powerful than exploratory behavior, such as aversive stimulation, and the presence of setting factors which increase the reinforcing function of ecological stimuli, such as deprivation of this class of reinforcers.

There are many studies which document this formulation. The meticulous research of Rheingold and her colleagues (1962 and 1964) offers one of the best examples. Rheingold, Stanley, and Doyle (1964) provided 2- to 5-year-old children with an opportunity to touch a ball and to discover that touching the ball resulted in a 3-second motion picture of brightly colored paper cut-outs of geometric figures (circles, squares, stars, and crosses of various sizes) moving slowly across a dark field to the accompaniment of

a Swiss music box rendition of "Annie Laurie." The reinforcing effects of the visual and auditory stimuli were assessed in terms of changes in rate of response to increasing fixed-ratio schedules of reinforcement. Of the 20 children who were assigned to increasing fixed-ratio schedules, 15 showed increasing rates of responding. On the other hand, none of the five children who were given a continuous reinforcement schedule showed an increase in rate of responding. The findings strongly suggested that the contingent visual and auditory stimuli, under the setting factors of this experiment, functioned as reinforcers for these children. According to our definition, the visual and auditory stimuli would be classified as ecological reinforcers, and the behavior strengthened, although simplified for laboratory purposes, would be called "exploratory."

Cognitive Behavior

Many, or perhaps most of the classes of behavior acquired or elaborated during the basic stage are referred to as cognitive. Although cognitive structures, cognitive processes, and cognition are frequently alluded to as hypothetical constructs in the child development literature to explain overt verbal and motor behavior, a clear-cut definition of cognitive behavior is certainly hard to come by. A perusal of the Annual Review of Psychology will bear out this observation. A serviceable definition from the behavior analysis literature is offered by Skinner (1968), who says that the term, cognitive behavior, may be empirically meaningful when it refers to (1) knowing how to do things, i.e., abilities, and (2) knowing about things, i.e., knowledge.

An ability, in this frame of reference, is defined as the probability of an operant sequence of a certain order, as in solving a problem, or the probability of an operant sequence with characteristic response topographies,

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as in riding a tricycle. The tremendous number of abilities of a preschool child may be classified according to the three sources of antecedent stimuli, namely:

1. The anatomy and physiology of the child's own body (e.g., hopping, skipping and jumping).

2. Physical objects (e.g., cutting with scissors).

3. People (e.g., participating in a game).

Knowledge, the second part of the definition of cognitive behavior, which is usually treated as a "thing" acquired, stored, and brought forth as needed, is defined here as the probability of occurrence of a class of reinforceable behavior on a specific occasion, or stimulus control. The sub-categories of knowledge include:

1. Simple discriminative behavior (e.g., taking orange juice when given a choice between orange juice and tomato juice),

2. Conceptual or abstract behavior (e.g., collecting only round flat stones along the seashore and ignoring their size and color),

3. Describing past events (e.g., one's birthday party), and

4. Describing how things work (e.g., how to wind up a toy so that it will propel itself).

Note that in this formulation many categories of social behavior are included in cognitive behavior - knowing how to do things in relation to people and knowing about things in relation to people.

A classification of a child's cognitive repertories leads naturally to the question of assessment and the concept of intelligence as measured by intelligence tests and of competence as measured by inventories. Because of the way intelligence tests are constructed, they cannot be considered anything other than aptitude tests for school work in the schools as we

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know them today. They are made primarily for groups and their results pertain to groups. On the other hand, inventory-type tests, or criterion-referenced tests, when derived from the sequences in a teaching program, serve as tools for planning instruction. They are made for an individual child and their results apply to an individual child.

Moral Behavior

The third, and last topic I shall touch upon is the development of early moral behavior. The major theorists - cognitive-developmental, social-learning, and psychoanalytic - all treat early moral behavior differently, depending on their assumptions about the original moral nature of the child.

Cognitive theorists contend that moral behavior evolves from parental practices and the innate philosophical tendencies of the child, with the latter in the dominant role. They maintain that "true" moral behavior begins in middle childhood, the time when the essential cognitive structures are formed. Prior to middle childhood, what appears to be moral behavior is mere compliance with adult standards. Most of the research generated by the cognitive-developmental theory deal, not with moral behavior, but with the correlates of moral behavior, such as moral judgment.

Social-learning theorists and neo-Freudian theorists view moral behavior somewhat, but not radically, differently. Both allege that early moral behavior develops through a combination of child-rearing practices and internal processes. Social-learning theory, for example, contends that the various types of parental discipline, described as power assertion, love-withdrawal, and induction, influence the development of children's personality traits, particularly those associated with moral behavior, e.g., internal orientation, guilt intensity, and resistance-to-temptation (Hoffman &

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Saltzstein, 1967). Neo-Freudian theory, on the other hand, posits that parental punishment eventually becomes self-punishment through the development of the superego and that most responses to wrongdoing involve satisfying the need for self-punishment. This anticipation of future self-punishment following wrongdoing serves as a drive for behaving in ways consistent with internalized standards (Lovell, 1971). Despite their theoretical differences, the two groups agree that the essential problem is to discover how rules are internalized, i.e., how they are obeyed because of some inner motivation.

The difficulty with these treatments, and the work stemming from them, is that each concentrates on hypothetical internal conditions (e.g., conscience, superego, and moral character) as the main determiner of moral behavior. These workers have collected data on the behaviors of children in family and school settings, in laboratory situations, and in interviews with parents and have interpreted their findings as indicators of either the properties of the child's personality, such as the strength of his superego, or of his cognitive structure such as the degree of his socio-eccentricity. Consequently, they have postponed the study of moral behavior itself, from its inception to its mature stage, presumably until their research has clarified the inner workings of the personality, or of the mind.

From a behavior analysis point of view, initial moral development is a function of parent-child, sibling-child, and teacher-child relationships during the basic stage of early childhood, together with the consequences of the parent-child relationships that occur in the universal stage of infancy. These pre-moral interactions in the universal stage influence initial moral behavior in that they produce relevant stimulus functions (e.g., the distinctive social properties of the mother); response functions

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(e.g., the language practices of the family); and setting events (e.g., the emotional "atmosphere" of the family setting).

The practices of parents, siblings, and preschool teachers in helping a child adhere to his family's moral code, at least in their presence, are here analyzed in terms of the well-known and well-substantiated processes for strengthening and weakening sequences of operant behavior such as the presentation of positive reinforcers and the removal of negative reinforcers. On the other hand, the practices used to help a child comply with prescribed moral standards when he is not being supervised are analyzed in terms of concepts such as self-management, decision making, and problem solving. Decision making and problem solving come into play in response to ambiguous moral situations including, among other things, behavior referred to as "moral judgment." In other words, in this formulation of early moral behavior, new interactional sequences are established and nothing is internalized.

In passing, one might say that one of the differences between a theorist who espouses hypothetical constructs and one who favors a completely empirical approach is that the former tends to ask, in mulling over a concept: "How can I internalize it?" while the latter asks: "How can I externalize it?"

So much for this limited discussion of exploratory behavior, cognitive behavior, and early moral development. Each of these topics and others will be given detailed treatment in a forthcoming publication (Bijou, 1972).

III. Some Implications

I now want to consider some of the implications of a functional analysis of the preschool years for theory, research, and practical application.

Theory

From a theoretical point of view, it is likely (or at any rate, I hope it is) that the formulation presented here would stimulate others to revise,

refine, and extend a functional analysis of this stage of development. In so doing, they would contribute to a non-normative analysis of human development, one that focuses on an individual child living in the context of his particular family. It is also likely (and again, I hope it will come about) that such a formulation would prompt other psychologists to make a functional analysis of human development in the succeeding periods; namely, the societal stage of later childhood, and the societal stage of adolescence. As I noted in my introductory remarks, when these analyses are laced together - even in a first-approximation form - the field will have an explicit set of empirical behavior principles on child behavior and development which would interrelate with the empirical principles of infrahuman behavior, on the one hand, and the principles of practical application to child problems, on the other.

Research

From a research point of view, it is likely that a functional analysis of the preschool years would provide a frame of reference for bringing together many of the research findings in this area which have been obtained under conditions amenable to the tenets of a functional analysis. It would also stimulate, I hope, the much-needed research on the basic and applied problems that surface during this developmental era. In basic research there is need for systematic research on the processes underlying exploratory behavior, and the beginnings of problem solving, decision making, self-management, creative behavior, and moral behavior. In the applied area there is particular need for research on techniques for child-rearing practices and early childhood education. The research of Hart and Risley (1974) on teaching techniques in casual situations as compared to formal or contrived situations, is an excellent example.

Finally, I hope that a functional analysis of the basic stage would encourage a great deal more research in natural settings; that it would stimulate more investigators "to go where the interaction is" - in the home, in the neighborhood, in the preschool - to get descriptive and functional data on actual events, and to get them in a way that they can be interrelated without any kind of transformational operations. About seven years ago, Baldwin (1967) pointed out that the field of child development needed lots of descriptive information on what parents, siblings, and teachers do when they interact with young children. I am emphasizing the same point but I would add that if the material gathered is to be useful to all workers in the field, it must be completely free of interpretative interjections such as feelings, intentions, wants, needs, and so on.

Practical Applications

From the point of view of practical application, it is my hope that a functional analysis of the preschool years will accelerate application of behavior principles to early childhood education and child-rearing practices in particular. I hope, also, of course, that it would provide new leads for the improvement of child behavior therapy, including treatment carried on by teachers, parents, child-care workers, and the like. However, we should expect only small gains here because this area has already moved rapidly ahead in recent years, partly because of the urgency of the problems presented and partly because the techniques, when properly applied, have been outstandingly effective.

Early childhood education. Behaviorally oriented educators and child psychologists working in early childhood education have, it seems to me, been strong in applying behavior principles to improving teaching procedures but weak in applying them to improving curricula (Evans, 1971). They seem to

be engulfed in the longstanding controversy about whether the nursery school curriculum should be based on the "needs" of the child or on the "needs" of society, and have taken the position that they must advocate a curriculum which emphasizes the "needs" of society, mainly because they have little or nothing to offer a program designed to meet the "needs" of the child. This controversy persists despite the fact that many have argued, including experts in early childhood education such as Hunt (1973), that this kind of dichotomous conceptualization creates pseudo-problems. A nursery school program said to be built entirely on the "needs" of the child, whether they are derived from the maturational, psychoanalytical, or cognitive model, cannot in actuality be carried out independently of the social settings and the physical objects in that society. Nor can a nursery school program said to be based entirely on the "needs" of society, whether the emphasis is on social behavior or on academic achievement, be carried out without careful consideration of the physical and psychological characteristics of the young child. The only sensible view is that the nursery school curriculum must take into account the characteristics of both the child and his society. A functional analysis of development in the preschool years should help workers in this field approach curriculum problems on the basis of what we know about the kinds of nursery school activities that maximize the child's personal development within the context of his society as it exists and as it might become.

Child-rearing practices. Most of the efforts in applying behavioral principles to child-rearing practices have been devoted to developing procedures for parents of young deviant children and parents of low income families. In many instances, serviceable techniques have been developed to help mothers train their children to compensate for behavioral deficits

or to reduce behavioral excesses. There are many examples of this work. An excellent example is the work of the Portage Project developed by the Shearers (1972). A functional analysis of the basic stage, and particularly an analysis of cognitive behavior, should help to advance the programming aspects of this kind of work.

The application of behavioral principles to child-rearing practices, per se, has not yet begun. It is my hope that a functional analysis of the basic stage will help parents establish both personal and social goals for their children and work out the means of achieving them in the context of normal family living. I hope, too, that it will serve as a basis for working out methods to help parents accept the responsibility for laying a solid behavioral foundation for their child, one compatible with their own values and standards. Just as it is understood that parents must do certain things for a baby during the universal stage to assure his physical health and well being, so should it be understood that they must do certain things for a young child during the basic stage to assure both his physical and psychological health and well-being. Parents must attempt to make explicit the kinds of personal and social behaviors, especially those called "moral", which they value in their child, and to use procedures that foster them based on current knowledge rather than on outworn conceptions of man (Rheingold, 1973).

IV. Summary and Conclusions

Let me summarize what I have said about a functional analysis of the preschool years, and draw a few conclusions.

The basic stage of development is one of the most important, if not the most important, stage in the entire developmental cycle mainly because it is the period during which the foundation is laid for the complex psychological structures that will be built in a child's lifetime. It is this period, more

than any other, that makes each child a unique "personality."

The major theories - psychoanalytic, social learning, and cognitive-developmental - emphasize important behavioral characteristics of the period such as the emergence of independence, the development of sex role behavior, and the appearance of the symbolic-conceptual mode but their proposed determiners of behavior pose problems because they include non-observables such as egos, drive strengths, and cognitive structures.

General behavior analysis, with its emphasis on observable terms and the behavior of the individual child, has arrived at a point at which it can deal with the complex interactions in this stage of development. An analysis of the preschool years is essential not only because of the available underpinnings, but also because there is need to fill the knowledge gap between the principles of animal behavior and the principles of practical applications to the problems of children.

A theoretical sketch of the basic stage takes into account the characteristics of the child with his unique set of stimulus and response functions generated by his interactional history in the universal stage. It also takes into account the characteristics of the environment during that developmental period, including the casualness of parent-child interactions, the powerful strength of social reinforcers, the effectiveness of modeling interactions, and the new freedom of activity resulting from the child's biological maturity and high energy levels.

When one turns to the child development literature to analyze the major classes of interactions of the basic stage, he encounters formidable difficulties in trying to formulate a set of functional definitions. He finds, for example, that some concepts are defined subjectively, some normatively, some operationally, and some hypothetically. Research and formulations on

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exploratory behavior, cognitive behavior, and moral behavior are examples. Yet there is every reason to believe that all of the complex interactions in the preschool years can be treated according to the assumptions of a behavior analysis. But it will take a little effort.

I hope that the comments offered here and the detailed formulation that will appear shortly will stimulate further theory construction not only of the basic stage but also of the societal stages, that it will give investigators a frame of reference for interrelating their findings, and that it will reaffirm, once more, the need for in situ research, both descriptive and functional. Finally, I hope that a functional analysis of the basic stage will begin to have an impact on child rearing practice and early childhood education. For if we believe that it is essential for man to acquire a new concept of himself - one consistent with the findings from a natural-science study of man - the most effective way for him to begin to achieve it is through the casual, learning situations that occur naturally in the home, community, and school during the preschool years.

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